

**REMARKS**

This Amendment, submitted in response to the Office Action dated October 16, 2008, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested based on the following analysis.

**1. Overview of Final Office Action**

Claims 1-18 are all the claims pending in the application.

Claims 12 and 16-18 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. These claims are alleged to introduce new matter related to a computer readable recording medium while the specification as originally filed allegedly fails to disclose a computer readable recording medium having recorded thereon a program for executing a method of claim 1.

Claims 13, 14, 16 and 18 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement, since the claims indicate that “the first virtual microphone is delayed by a time elapsed between an onset of the direct sound in the acoustic signal and an onset of a last reverberation sound”, which allegedly conflicts with claim 1 which defines that “the first virtual microphone signal corresponds to a direct sound without any time delay”.

Claims 1-5, 8 and 11 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Tazawa et al. (“A Fully Passive Echo-Canceler using a Single Microphone”; hereafter “Tazawa”).

Claims 6, 7 and 12 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Tazawa.

Claim 9 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Tazawa in view of Dear et al. (US 4,832,147; hereafter “Dear”).

**2. Analysis of Claim Rejection under 35 U.S.C. § 112, First Paragraph**

With respect to claims 12, 17 and 18 directed to computer-related claims, Applicant respectfully submits that the claims do not introduce new matter or fail to meet the written description requirement as required by 35 U.S.C. § 112, first paragraph.

Original claim 12 recites:

A computer terminal comprising an input for a received acoustic signal, in particular a microphone and/or a data carrier device and/or a data line, an output for an enhanced quality acoustic signal, in particular a loudspeaker and/or a data carrier device and/or a data line, and means for performing a method according to claim 1.

In the original claim, Applicant intended to disclose that the method of claim 1 is performed by means which is an element of a computer terminal. Applicant recognized, however, that the claim may not meet the requirements of a computer-related claim that complies with the requirements for statutory subject matter, and thus, amended the claim in the previous Amendment filed August 20, 2008.

In this respect, Applicant submits that the amended computer-related claim does not introduce new matter even though the claimed computer readable recording medium is not explicitly described in the specification as long as the original claim recites a computer terminal comprising an element (means) for performing the method of claim 1.

Further, it should be noted that, in determining whether there is sufficient written description to inform a skilled artisan that Applicant was in possession of the claimed invention as a whole at the time the application was filed, the law does not require an explicit disclosure in the specification. It is well settled that “[i]f a skilled artisan would have understood the inventor to be in possession of the claimed invention at the time of filing, even if every nuance of the claims is not explicitly described in the specification, then the adequate description requirement is met. See, e.g., *Vas-Cath*, 935 F.2d at 1563, 19 USPQ2d at 1116; *Martin v. Johnson*, 454 F.2d

746, 751, 172 USPQ 391, 395 (CCPA 1972) (stating “the description need not be in *ipsis verbis* [i.e., “in the same words”] to be sufficient”).

At least due to the above analysis, Applicant respectfully requests withdrawal of the rejection to claims 12, 17 and 18.

With regard to claim 13-16, Applicant amends these claims to more clearly define the subject matter claimed therein. Support for the amendments can be found at least in Fig. 3 and corresponding descriptions. Since these claims are amended as indicated by the Examiner, Applicant respectfully submits that they do not raise new issues requiring further consideration and search by the Examiner. Accordingly, entrance of the amendments are respectfully requested.

### **3. Analysis of Prior Art Rejection**

With regard to claim 1, the Examiner still alleges that Tazawa discloses all the elements of the claimed method. In particular, the Examiner reads the claimed virtual microphone signals on the echo signals “Echo 1”, “Echo 2”, etc., which are represented by  $A_1s(t-T)$ ,  $A_2s(t-T_2)$ , etc.

Applicant respectfully disagrees with the Examiner’s interpretation at least because Tazawa does not show at all the claimed virtual (microphone) signal which does not include reverberation (i.e., echo).

Tazawa discloses how to obtain a direct signal only by subtracting from all echo signals having different amplitudes and time delays a detected signal  $m(t)$ , while the claimed method provides how to obtain an output signal by generating and adding virtual signals without reverberation.

The signals, termed “Echo 1” and “Echo 2” in Tazawa, themselves are echo signals or reverberation signals which have different amplitudes and time delays. In other words, the term itself indicates that the signals “Echo 1” and “Echo 2” are echo or reverberation signals; and further, since these signals have different amplitudes ( $A_1$  and  $A_2$ ) in addition to time delays in view of the direct sound  $s(t)$ , they are echo or reverberation signals. However, the claimed signals added together, each with a respective time delay, to produce an output signal are termed as “virtual” signals, which one skilled in the art would understand that they are not real signals

but virtual signals. Moreover, these signals are defined as free of reverberation (or echo) which may exist only in an ideal environment.

The Examiner alleges in the “Response to Arguments” section on page 7 of the Final Office Action that the echo signals “Echo 1” and “Echo 2” do not have additional reverberation. This means that these echo signals are only time-delayed. However, as noted above, these echo signals have different amplitudes, which explains they have additional elements other than time-delay elements. Such additional elements can be explained as indicating additional reverberations.

Lastly, while the method of claim 1 produces an output signal by adding reverberation-free virtual signals, Tazawa does not disclose a signal corresponding to the claimed output signal. If the signals “Echo 1” and “Echo 2” correspond to the claimed virtual signals, the signal  $m(t)$  should correspond to the claimed output signal. However, the signal  $m(t)$  is admitted as corresponding to only the claimed received acoustic signal (see the last line of page 3 of the Final Office Action). Indeed, the signal  $m(t)$  must include the direct sound  $s(t)$  as well as echo signals, where the direct sound  $s(t)$  is not any time-delay element. On the contrary, the claimed method indicates that the output signal is produced by adding time-delayed signals; and the output signal is not indicated as including a direct sound. Thus, Tazawa does not disclose the claimed output signal.

At least due to the above reasons, claim and corresponding claim 11 would not have been anticipated by Tazawa.

Claims 2-10 and 13-16 should be allowable at least due to their dependencies and additionally recited elements therein.

#### **4. Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

*/Seunghee Park/*

SUGHTRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

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Seunghee Park  
Registration No. 60,719

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

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